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Our vision

To be a world leader in the ethical generation and use of knowledge to benefit the patients and surrounding community of St. Michael’s and people throughout the world.

Our mission

The Li Ka Shing Knowledge Institute will advance understanding of the underlying causes of disease, improve patient care and influence health policy. We will develop and study new methods of education and research to improve the health of patients and populations, both locally and globally.

Our values

As part of St. Michael’s, the values of the Li Ka Shing Knowledge Institute are: human dignity, excellence, compassion, social responsibility, community of service and pride of achievement. The institute strives to always be innovative, and commits to complete and unbiased reporting of all research results.

The ethical generation and use of knowledge is a commitment to complete reporting of information, including the benefits, harms and societal implications of strategies to improve health.
Message from the research executive leadership team

It is an incredibly exciting time to be a part of the research team that makes up the Keenan Research Centre and the Li Ka Shing Knowledge Institute. Our research priorities include basic science related to organ dysfunction, inner city health, global health and knowledge translation. The knowledge translation program, our newest priority, was catalyzed by a generous $15 million donation from the Li Ka Shing Foundation just over five years ago.

Knowledge Translation: From Evidence to Impact is a report highlighting a small sample of our achievements in knowledge translation from the past five years. Guided by our commitment to improving the health of vulnerable populations, and aligned with the hospital’s strategic direction that “research at St. Michael’s is focused on discovery that impacts patient care,” we are particularly proud of the tangible improvements to care and health policies our research has contributed to, locally and around the world.

Knowledge translation is difficult; successfully and rapidly implementing innovations into practice is no small feat. The stories we are featuring in this report all focus on creating and translating new knowledge to provide more effective health services and products, strengthening the delivery of health care and improving the health of Canadians and people around the world.

What is knowledge translation?

Knowledge translation is about putting the best evidence (what we know works) into practice (how we care for patients) and policy (how our health care system is organized and how decisions are made). Knowledge translation can be incredibly complex because it often means implementing change in practice or in behaviour.

Key components of knowledge translation are: understanding the barriers and facilitators to change; designing interventions that are likely to improve care; and evaluating whether those interventions were successful. We want to be able to measure the impact of our work and in particular, to find out whether it improved patient outcomes or decreased health care costs.

A successful research institute in Canada cannot depend on peer-reviewed funding sources alone to recover 100 per cent of its costs. To maintain the quality of our research program and deliver impactful health care innovation to our patients and our communities, we receive ongoing support from the hospital and its foundation. For this, we are truly grateful.

On behalf of the hospital and the researchers at the Keenan Research Centre and the Li Ka Shing Knowledge Institute, we would like to thank our collaborators, funding partners and donors for their transformative assistance and encouragement over the years. Your support has enabled us to make positive impacts on patient care and health policies for the benefit of all.
2007–12 *facts and figures*

The past five years have been a time of tremendous growth for our research programs: academic publications have increased by 72 per cent over five years; our success rate in the September 2011 CIHR funding competition was 30.8 per cent, well above the national average of 17.5 per cent; and our Canada Research Chair allocation has increased by 30 per cent.

For the fiscal year:

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BioDiaspora
Confronting infectious diseases in an increasingly globalized world

Dr. Kamran Khan

Anticipating and preparing for the next international infectious disease outbreak or global pandemic is Dr. Kamran Khan’s specialty. Inspired by the 2003 SARS outbreak, Dr. Khan developed BioDiaspora, a unique and powerful web technology to rapidly predict how infectious diseases are most likely to spread across the globe via the worldwide movements of billions of travellers on commercial flights.

BioDiaspora can predict in minutes which city is likely to become the next “hotspot” and identify which public health countermeasures will be most effective in preventing or disrupting the spread of disease. This global epidemic intelligence can then be shared with governments around the world to facilitate timely, evidence-based decisions. The success of BioDiaspora was widely reported after it accurately predicted how the H1N1 pandemic would spread around the world in 2009.

The spread of the H1N1 influenza virus is accurately predicted after BioDiaspora rapidly analyzes the movements of 2.3 million travellers flying out of Mexico. This landmark study is published in the New England Journal of Medicine.

BioDiaspora is used to help create a report for the Public Health Agency of Canada on how Canada can best anticipate and mitigate the risks of emerging global infectious diseases.

Dr. Khan partners with the Kingdom of Saudi Arabia to prepare for the annual hajj pilgrimage – the largest annual mass gathering in the world – during the H1N1 pandemic.

Dr. Khan develops the concept of BioDiaspora after SARS spreads to more than two dozen countries.

Producing real-time intelligence to support real-time decision-making

In today’s highly interconnected world, infectious diseases can spread across international borders in the time it takes for air travel between sites. Dr. Khan’s BioDiaspora supports public health decision-making in real-time.

Dr. Khan has partnered with numerous international organizations, including the U.S. Centers for Disease Control and Prevention, the European Centre for Disease Prevention and Control, the U.K. Health Protection Agency (for the London Olympics), the Kingdom of Saudi Arabia and the World Health Organization.

To learn more about BioDiaspora, visit www.biodiaspora.com

Dr. Kamran Khan, clinician-scientist in the Division of Infectious Diseases and founder of BioDiaspora

Recipient of a CIHR New Investigator Award and the 2011 Laureate for Innovation, Computerworld Honors Program, International Data Group
Dr. Khan partners with investigators at Harvard University for the integration of two cutting-edge technologies: HealthMap – a real-time, web-based global infectious disease surveillance system – and BioDiaspora, to anticipate infectious disease risks during the Winter Olympics in Vancouver.

Dr. Khan works with the U.K. Health Protection Agency to support real-time risk assessments of infectious disease threats during the Summer Olympics in London. This work receives worldwide media coverage, including a documentary on BBC World News Horizons.

2013: Dr. Khan partners with MaRS Innovation and St. Michael’s Hospital to create a social benefit corporation to deliver BioDiaspora services. The company’s mission is to promote public health security around the world from emerging infectious disease threats.

2013: Dr. Khan is invited to speak about BioDiaspora at the White House.
Making homelessness a health issue
Dr. Stephen Hwang

Dr. Stephen Hwang has been a leader in making homelessness a health issue in Canada, not just a social issue.

One of the world’s most influential experts on health and homelessness, Dr. Hwang provided the first evidence that homeless and marginally housed people are much more likely to die and to have a shorter life expectancy than even the poorest Canadians with adequate housing.

His groundbreaking research on vulnerable populations conducted through the Centre for Research on Inner City Health also showed that homeless patients cost about $2,500 more per hospital stay than the average patient.

His research has led to interventions to reduce avoidable hospitalizations and emergency department visits for people who are homeless. Most recently, he has helped to lead the At Home/Chez Soi study in Toronto, a groundbreaking trial that will determine the cost-effectiveness of housing and mental health supports for people who are homeless and have mental illness.

Already, this work has led to a commitment by government to fund this innovative approach to solving the problem of chronic homelessness.

In February 2013, the Minister of Health and Long-Term Care announced permanent funding of $4 million for the housing and clinical supports for At Home/Chez Soi participants in Toronto.

In February 2013, the Minister of Health and Long-Term Care announced permanent funding of $4 million for the housing and clinical supports for participants in Toronto. The federal budget, released in March 2013, contained $119 million per year over five years to support mental health services based on At Home/Chez Soi recommendations.

Dr. Hwang’s research has helped lead to the creation of alternate systems of health care delivery for people who are homeless, such as Inner City Health Associates, a group of physicians who work in various locations, including shelters, specialized clinics and drop-in centres.

Between Oct. 1, 2011 and Sept. 30, 2012, Inner City Health Associates saw 4,326 unique clients at 43 locations across the GTA.

For more information, visit the Centre for Research in Inner City Health’s website at www.crich.ca

Dr. Stephen Hwang, staff physician, Division of General Internal Medicine, and research scientist at the Centre for Research on Inner City Health

Recipient of the inaugural endowed Chair in Homelessness, Housing and Health in 2013, and Community-Based Research Award of Merit, Centre for Urban Health Initiatives and the Wellesley Institute
The 2013 federal budget contained $119 million per year over five years to support mental health services based on At Home/Chez Soi recommendations.

Dr. Stephen Hwang is appointed St. Michael’s Hospital’s inaugural endowed Chair in Homelessness, Housing and Health, believed to be the first hospital-based chair in homelessness in the world.

Impact:
A separate multidisciplinary Inner City Family Health Team was created to serve homeless clients with complex health needs, predominantly current or former users of Seaton House, Canada’s largest shelter for men with more than 430 beds.

Impact on policy and practice:
Dr. Hwang’s research has helped lead to the creation of alternate systems of health care delivery for people who are homeless, such as Inner City Health Associates, a group of physicians who work in various locations, including shelters, specialized clinics and drop-in centres.

Above: Dr. Stephen Hwang, staff physician, Division of General Internal Medicine, and research scientist at the Centre for Research on Inner City Health
MOVE ON

Keeping our elderly patients active and healthy

Dr. Sharon Straus

World-renowned knowledge translation researcher and geriatrician Dr. Sharon Straus believes that ensuring that older patients are physically active immediately after admission and throughout their hospital stay results in greater benefits to them, the hospital and to the health care system as a whole.

This research developed into the Mobilization of Vulnerable Elders in Ontario (MOVE ON) project, a strategy to help older patients maintain function through regular physical activity while in hospital. In November 2011, the Council of Academic Hospitals of Ontario approved the implementation of MOVE ON – one of only two projects funded by the Adopting Research to Improve Care Program – in its 14 member hospitals across Ontario.

For the patient, physical activity translates into shorter hospital stays (on average, by one day per patient), decreased chances of delirium and depression and increased chances of returning home healthier. Six per cent more patients go home instead of to a nursing home or other care facility because of the strategy.

The early mobilization strategy also has the potential to reduce pressures on the health care system, by decreasing days that patients wait for alternate level of care, since patients are less likely to require admission to long-term care following implementation of the strategy. Given that seniors account for 63 per cent of acute inpatient days and 43 per cent of provincial health expenditures, this intervention can make a substantive impact.

MOVE ON has attracted the attention of the government of Alberta, which is aiming to implement it in three of its hospitals in late spring 2013. Dr. Straus and the MOVE ON team, including co-lead Dr. Barbara Liu at Sunnybrook Health Sciences Centre, are now looking at adapting this model of education and participation to other areas of geriatric care, such as the prevention of delirium.

Dr. Sharon Straus, geriatrician and director of the Knowledge Translation Program

Tier 1 Canada Research Chair in Knowledge Translation and Quality of Care (2010-17); and recipient of the 2011 Complete Physician Award, St. Michael’s Hospital
“The MOVE ON project will help implement evidence-based practices to improve the delivery of care in some of our most vulnerable populations.”
— Karen Michell, executive director of the Council of Academic Hospitals of Ontario

Impact:
MOVE ON has attracted the attention of the government of Alberta, which is aiming to implement it in three hospitals in late spring 2013.

Number of patients audited on whether they were mobilized: approximately 10,000.
Complications that affect older people that are avoided by early mobilization: delirium, depression, functional decline.

The MOVE ON team is now looking at adapting this model of education and participation to other areas of geriatric care, such as the prevention of delirium.

Dr. Sharon Straus, geriatrician and director of the Knowledge Translation Program
How changing drug policies save lives and dollars

Dr. Muhammad Mamdani and Dr. Irfan Dhalla

Dr. Muhammad Mamdani is head of the Ontario Drug Policy and Research Network, a province-wide network of researchers who evaluate the risks and costs of drugs. One area this network focused on was therapies for diabetes.

In 2007, evidence emerged suggesting that a class of oral drugs used for diabetes was associated with risks to the heart. Dr. Mamdani’s team compared the safety of the two drugs in this class – rosiglitazone (Avandia) and pioglitazone (Actos). The team found that rosiglitazone caused a significantly higher risk of death than pioglitazone. These results were widely disseminated, receiving international media exposure, and were used by the U.S. Food and Drug Administration, the European Medicines Agency and Health Canada to change policy. For example, the Ontario government changed the funding status of both drugs, making them harder to prescribe.

The research team estimates that over the past four years, more than 100 deaths and 300 admissions for heart failure per year were avoided by implementing this policy.

Dr. Mamdani’s team compared the safety of the drugs rosiglitazone (Avandia) and pioglitazone (Actos). The team found that rosiglitazone caused a significantly higher risk of death than pioglitazone.

The team estimates that more than 100 deaths and 300 admissions for heart failure per year were avoided by changing the funding status of these drugs.

Many patients with Type 2 diabetes who are not on insulin test their blood glucose levels regularly, using portable devices and strips, although virtually no evidence suggests that this improves their outcomes. In 2009, a drug network study led by Tara Gomes, a Li Ka Shing Knowledge Institute scientist, examined the impact on patient outcomes and the savings in costs that could be achieved by changing the current Ontario policy of paying for these test strips. She found the province could save between $25 million and $300 million over five years, depending on the specific strategy used, with no impact on patient outcomes.

Since the publication of these findings, the Canadian Diabetes Association has recognized that limits on government-funded diabetes test strips are reasonable in some patients and has changed its recommendations on optimal testing frequency.

When implemented widely by the province, this will reduce unnecessary test strip use and save the Ontario public health care system between $5 million and $60 million annually.
A drug network study led by Tara Gomes examined the impact on patient outcomes and the savings in costs that could be achieved by changing the current Ontario policy of paying for Type 2 diabetes test strips. She found the province could save between $25 million and $300 million over five years, depending on the specific strategy used, with no impact on patient outcomes.

Opioids, which are used to treat pain, are among the most commonly prescribed medications in Canada. Although effective in relieving pain, they also have significant risks, including addiction and death. Dr. Irfan Dhalla and his colleagues found that 423 Ontarians died in 2006 from opioid overdoses.

Research conducted by Dr. Dhalla and his colleagues helped prompt the development of the 2010 Ontario Narcotics Safety and Awareness Act. It is hoped that this will reduce the number of deaths in Ontario each year. Dr. Dhalla was also asked to help develop the Canadian Centre for Substance Abuse’s new strategy on prescription drugs, First Do No Harm, released in March 2013.

Impact on policy and practice:
Research conducted by Dr. Dhalla and his colleagues helped prompt the development of the 2010 Ontario Narcotics Safety and Awareness Act. Dr. Dhalla was also asked to help develop the Canadian Centre for Substance Abuse’s new strategy on prescription drugs, First Do No Harm, released in March 2013.

Dr. Irfan Dhalla, medical director of Quality and Research and staff physician in the Division of General Internal Medicine

Named a Toronto Star “12 to watch in 2012”; recipient of a Canadian Society of Internal Medicine New Investigator Award in 2012; Canadian Institutes of Health Research New Investigator Award in 2012; St. Michael’s Hospital Department of Medicine Outstanding Teacher Award in 2010 and 2012; Ontario Ministry of Research and Innovation Early Researcher Award in 2012; Ontario Ministry of Health and Long-Term Care Career Scientist Award in 2010; Canadian Institutes of Health Research Rising Star Award in 2010; and winner of the London School of Economics Brian Abel-Smith Prize in 2008.
Surgical training curricula development

**Better surgeons through better education**

*Dr. Teodor Grantcharov*

He calls it the “fastest KT [knowledge translation] in history.” The University of Toronto implemented Dr. Teodor Grantcharov’s new training program for surgical residents in 2012, two months before the *Annals of Surgery* published his research paper demonstrating its value.

The paper showed that surgical residents who received structured training in a simulated environment performed better when they started operating on patients than those without such training.

Dr. Grantcharov has a special interest in surgical education and the assessment of surgical skills, areas critical to improving patient safety and outcomes.

Even though preventable medical errors contribute to between 9,000 and 24,000 deaths in Canada each year, in surgery, there had been no formal mechanism to measure the skill level of surgical residents. The idea of requiring residents to show they are competent before they are allowed to operate on people mirrors the approach taken by the aviation industry, where would-be commercial pilots have to prove their proficiency before taking to the skies.

Dr. Grantcharov and Dr. Vanessa Palter, a U of T surgical resident at St. Michael’s, devised a study in which surgical residents were divided into two groups. One group received the conventional training for laparoscopic colorectal surgery—removing a tumour from the colon. The other group trained on a virtual reality simulator, received cognitive training and practiced surgery on cadavers.

Dr. Grantcharov received funding from the Royal College of Physicians and Surgeons of Canada to work on achieving international consensus on assessment in surgical education.
After successful completion of the training curriculum, each resident performed a major surgical procedure that was videotaped and analyzed by outside experts. Those who had the simulated training performed the procedure significantly better, scoring 16 out of 20 on a technical performance rating scale versus eight out of 20 for those with conventional training. The study demonstrated that learning curves in the operating room can be eliminated by structured training and assessment curricula. This has significant implications for the quality of future surgical training and patient safety.

**Impact:**

Dr. Grantcharov’s new training curricula have been adopted by the University of Copenhagen and the Catholic University of Santiago in Chile, and are in the process of being implemented in at least four U.S. universities.

He will be working with the governing bodies that regulate surgical training in Europe, Asia and North America to develop a consistent method of skills assessment at three critical phases in the development of a competent surgeon: upon entry to the training program, during training and at completion.
Dr. Laurie Morrison’s resuscitation research studies are some of the largest in the world and have contributed to markedly improved survival rates from out-of-hospital cardiac arrest.

Every year, about 15,000 to 20,000 Canadians suffer a cardiac arrest outside of the hospital. During a cardiac arrest, the heart stops beating, and unless it is restarted within minutes, the person dies. If a bystander quickly performs basic life saving interventions such as CPR or the application of an automatic external defibrillator (AED) on the cardiac arrest patient, the survival rate can quadruple to over 75 per cent.

Dr. Morrison’s research group, Rescu, in partnership with seven regional EMS services, have trained 10,000 paramedics and fire fighters to perform better CPR. Since 2004, their efforts have resulted in a five-fold increase in survival from out-of-hospital cardiac arrest.

When defibrillators – which administer shocks to restore heart rhythm – are used in conjunction with CPR in the first few minutes after cardiac arrest, survival rates dramatically improve by more than 75 per cent.

Based on these findings, all existing 1,800 AEDs in public places in the Toronto area were registered with Toronto EMS; previously, only 750 were registered. This change made it easier for 911 dispatchers to alert an EMS professional or bystander the location of the closest AED.

Dr. Morrison recommends that any large site where 200 or more people gather should have an AED. An additional 1,300 AEDs were placed throughout Toronto, including 27 at St. Michael’s Hospital; this has resulted in over 40 lives saved every year through the actions of bystanders.
In another large-scale knowledge transfer study involving 34 Ontario hospitals, the work of Dr. Morrison’s team led to a three-fold increase in the use of therapeutic hypothermia in emergency departments and intensive care units. Following resuscitation from a cardiac arrest, therapeutic hypothermia – cooling body temperature by three to five degrees Celsius – is the only in-hospital post arrest treatment shown to both improve survival and reduce the likelihood of severe brain damage caused by lack of blood flow during cardiac arrest.

- Cooling eight patients saves one extra life which would not be saved without cooling.
- 1,400 patients a year in southern Ontario are cooled, resulting in 175 more people per year surviving with good neurological function because of this intervention.

For more information about Dr. Morrison’s work, visit www.rescu.ca

Dr. Laurie Morrison, director of Rescu
Robert and Dorothy Pitts Chair in Acute Care and Emergency Medicine

**Impact:**
Increase in survival rate since the study began: five-fold
Number of lives saved as a result of better training in CPR and AED use: 250 more lives saved every year just in Toronto and the surrounding regions.

**Impact on policy and practice:**
Number of patients cooled after suffering a cardiac arrest in southern Ontario: 1,000 per year
Lives saved as a result of cooling: 125 per year

An additional 1,300 defibrillators were placed throughout the city of Toronto, including 27 at St. Michael’s Hospital, which has resulted in over 40 lives saved every year through the actions of bystanders.

In February 2013, the federal government announced a $10 million investment in the purchase and installation of AEDs in public venues across Canada.
Million Death Study

When you count the dead, the dead count

Dr. Prabhat Jha

A world leader in global health research, Dr. Prabhat Jha came from the World Health Organization and the World Bank to become the founding director of the Centre for Global Health Research in the Li Ka Shing Knowledge Institute. His Million Death Study is one of the world’s largest studies of the causes of premature mortality, including child deaths, malaria, tuberculosis and AIDS, as well as smoking, alcohol use and diet. His research team will monitor 14 million people in over two million homes in India from 1998 to 2014 and implement a novel technique called a “verbal autopsy” to find out how people die and how they lived.

Knowing why people die is important not only for their families, but also for public policy and health care budgets. Results from the Million Death Study have already led to changes that are saving lives.

The study found that smoking kills one million Indians every year – significantly more than previously thought. As a result, the Government of India put stronger warning labels on cigarettes and raised tobacco taxes by 18 per cent. Dr. Jha’s research shows that higher tobacco taxes are the single most effective intervention to increase cessation rates and to deter future smokers. Higher cigarette taxes in the 2013-14 Indian budget could prevent between 400,000 and 700,000 smoking-related deaths over the next 20 years, while providing great social and economic benefits.

The study also found far more malaria deaths than had been estimated from hospital records, but far fewer AIDS deaths. As a result, the global attention on adult malaria deaths has increased. The Indian government changed its funding for infectious diseases based on this study.
Dr. Jha and colleagues documented that there were three to six million selective abortions in India in the last decade. The impact of this finding was almost instantaneous: just 10 days after publication of these findings, India’s Minister of Health amended the Prenatal and Diagnostic Testing Act, making it possible to seize equipment of companies providing information on the gender of fetuses.

The Million Death Study has been so valuable that Bill Gates asked for a briefing about it in March 2012. The study is now expanding globally to become the 10 Million Death Study, starting in Bangladesh, South Africa and Egypt.

For more information about the Million Death Study, visit www.cghr.org

**Dr. Prabhat Jha, founder and director of the Centre for Global Health Research**

- Named one of 25 Transformational Canadians by the Globe and Mail in 2010; appointed an Officer of the Order of Canada in 2012; and awarded the 2012 Luther Terry Award for Research on Tobacco by the American Cancer Society

**Impact:**

The study showed there were three to six million selective abortions in India in the last decade. Just 10 days after publication of these findings, India’s Minister of Health amended the Prenatal and Diagnostic Testing Act.

**Impact on policy and practice:**

More people die of malaria than AIDS. As a result of these findings, the Indian government changed its funding for infectious diseases.

Higher cigarette taxes in the 2013-14 Indian budget could prevent between 400,000 and 700,000 smoking-related deaths over the next 20 years.
POWER study
Towards health equity for women and men
Dr. Arlene Bierman

According to Dr. Arlene Bierman, working to achieve health equity is one of the most important things we can do to improve quality of life and ensure that our health system is sustainable. She spearheaded a study called the Project for an Ontario Women’s Health Evidence-Based Report, also known as the POWER study, which identified sizable and modifiable inequities in health and health care associated with income, education, ethnicity and place of residence.

The aim of the POWER study is to contribute to the reduction of these inequities, or health differences, with the ultimate goal of improving the health of all Ontarians through gender-sensitive approaches.

The 14-volume health report is the culmination of six years of work by 60 scientists from across the province and is the most comprehensive report on gender differences in health care ever conducted in Ontario.

It addresses the leading causes of morbidity and mortality, including diabetes, cancer and mental health. The study indicators developed by POWER are serving as a catalyst to improve health care and inform priority setting at all levels of government. POWER study reports, indicators and resources have had wide uptake locally, provincially, nationally and internationally.

For example, the study team found that across the province, low-income women are less likely to receive recommended cancer screening and in addition, many abnormal tests are not followed up within the recommended time.

This contributed to Cancer Care Ontario introducing a program to increase cancer screening among under- and never-screened populations and to establish a notification system to track follow-ups related to abnormal tests.

The POWER study website has had more than 60,000 downloads of materials, including 45,000 downloads of the reports in English and French.
Important gender differences in health and access, quality and outcomes of care found in POWER analyses led to the Ontario Ministry of Health and Long-Term Care requiring all funded health services research to include a gender analysis. For example, women were more likely to report having multiple chronic conditions and disability, and men were more likely to die prematurely. Women were less likely to receive indicated diagnostic testing after having a heart attack and men were less likely to receive testing for osteoporosis after a fracture when indicated.

**Dr. Arlene Bierman, general internist and geriatrician**

Dr. Bierman is the inaugural holder of the Ontario Women’s Health Council Chair in Women’s Health; 2012-13 Atlantic Philanthropies Health and Aging Policy Fellow; 2012-13 American Political Science Association Congressional Fellow; and was a visiting professor at the Centre for Gender Medicine, Karolinska Institute in Stockholm, Sweden in 2009.

**Impact:**

Important gender differences found in POWER analyses prompted the MOHLTC to require all funded health services research to include a gender analysis.

**Impact on policy and practice:**

Using POWER study results, Cancer Care Ontario introduced a program to increase cancer screening.
Healthydebate.ca

Unbiased facts and informed opinions to help you better understand our health care system

Dr. Andreas Laupacis

Dr. Andreas Laupacis believes that an informed public is an important part of a better and well-designed health care system. With that in mind, in 2011, he launched healthydebate.ca, a website dedicated to educating the public about the health care system, promoting debate and affecting health policy decisions.

Written by physicians, policy advisors and researchers, topics have included commentaries on doctors’ salaries, how social media affects the patient experience and wait times.

The site is a place where people can get accurate and expert information about Ontario and Canada's health care systems as well as engage in dialogue and discussion about the most important issues in health care.

It is a go-to source of information for not just the general public, but health care providers and public policy and decision makers.

The team plans to extend its reach by covering health care issues in Alberta – an exciting opportunity to compare and contrast health care delivery and policy.

Healthydebate.ca, a website dedicated to educating the public about the health care system, promoting debate and affecting health policy decisions, is launched in 2011.

In late 2012, the Toronto Star partnered with the Healthy Debate team to produce a six-part series on current health care topics.

In the meantime, the website continues to cultivate thoughtful discussion and positively influence readers’ attitudes and actions with the hopes of creating a better health care system for all.

Since its inception, the site has had more than 300,000 visits, averages about 30,000 views a month and has 3,600 Twitter followers. In late 2012, the Toronto Star partnered with the Healthy Debate team to produce a six-part series on current health care topics. Both publications produced their materials independently, offering readers different perspectives on the same issues.

Dr. Andreas Laupacis

Dr. Andreas Laupacis, executive director of the Li Ka Shing Knowledge Institute and general internist

Dr. Laupacis is the 2010 recipient of the inaugural Dr. Jill M. Sanders Award of Excellence in Health Technology Assessment, Canadian Agency for Drugs and Technologies in Health; the Health Services Research Advancement Award, Canadian Health Services Research Foundation in 2011; the 2012 Tier 1 Canada Research Chair in Health Policy and Citizen Engagement; and was invited to appear before the Standing Senate Committee on Social Affairs, Science and Technology in November 2012.
Healthydebate.ca has had more than 300,000 visits, averages about 30,000 views a month and has 3,600 Twitter followers.

“In May 2013, healthydebate.ca launches in Alberta.”

“One source of information that I would happily refer [people] to is healthydebate.ca. It’s a website that has health practitioners who have very interesting perspectives on various aspects of the health system.”
— Deb Matthews, Ontario’s Minister of Health and Long-Term Care, July 2012

“Healthydebate.ca is hitting the sweet spot of expert coverage and reader accessibility. It is an important source and partner for the Toronto Star.”
— John Cruickshank, publisher, Toronto Star
23 and ½ hours

Changing the way we engage and educate patients: medical school for the public on YouTube

Dr. Mike Evans

The “DocMikeEvans” channel on YouTube has been visited by more than six million viewers in the past year, with the number one hit being 23 and ½ hours where Dr. Mike Evans answers the question,

“What is the single most important thing we can do for our health?”

The video went viral, attracting more than three million views since it was posted in December 2011, reaching more people faster than any other evidence-based health messaging in history. It has been translated into several other languages by the community, reaching hundreds of thousands more in Portuguese, French, Spanish and Italian. The Arabic-language version, translated by a public health doctor in Riyadh, was uploaded in June 2012 and was the fifth most-watched video on YouTube the week it launched; it now has more than two million views.

Dr. Evans’ team has built on the success of 23 and ½ hours and created a popular series of whiteboard videos, including how to quit smoking, concussions 101, stress management, resolutions and the HPV vaccine. The team is about to launch a series of visual lectures on YouTube, a “medical school for the public,” on topics like fatigue, hip and knee replacement, low back pain, depression, weight management and melanoma.

His videos can be viewed at www.youtube.com/docmikeevans

Dr. Mike Evans, family physician

Named a Zoomer top 45 Canadian over 45 in 2012; recipient of the 2012 gold medal in Social Media at the Web Health Awards; the Patient Innovation Award from the Canadian Medical Association; the 2012 Award for Excellence in Creative Professional Activity, Department of Family and Community Medicine, University of Toronto.
More than a million people have watched the videos embedded on others’ websites, and more than 2,800 people have commented. The video has 33,928 “likes” and has been shared on YouTube more than 27,000 times; thousands more have done so by personal email.

Impact:
Dr. Mike Evans’ research is reaching millions around the world. He and his team have built on this success by creating visual lectures, a “medical school for the public” on YouTube.
While major changes to health systems have the potential to improve care, they can also sometimes be disruptive and expensive and don’t always work as planned. The evaluation of reforms is extremely important so that others can learn from what went well and where adjustments could be made. Dr. Sanjeev Sridharan’s centre, the Evaluation Centre for Complex Health Interventions, is the only such service in Canada focused on complex health interventions. It helps organizations evaluate the effectiveness of their programs, policies and health initiatives in improving people’s health.

Dr. Sridharan was recently awarded $1.9 million from the International Development Research Centre to build evaluation capacity in the health sector in China. China is undertaking unprecedented changes to its health care system, and this joint project with the China National Health Development Research Centre will help evaluate how effective these changes are in building an equitable and strong health system.

The evaluation centre is at the forefront of building evaluation capacity internationally. Dr. Sridharan is working with organizations in South Asia, including universities in Bangladesh, Afghanistan, India and Sri Lanka, and the Sri Lanka Evaluation Association to develop a post-graduate diploma program in evaluation in South Asia.
The HUB Health Research Solutions

**Working together to create long-term solutions**

The breadth and depth of research services available at the Li Ka Shing Knowledge Institute are unmatched anywhere else in Canada. Along with the Evaluation Centre for Complex Health Interventions, the newly formed HUB Health Research Solutions – made up of the health economics, applied health research and knowledge translation groups – provides one-stop shopping for clinicians, policy makers and academics.

*The Centre for exceLlence in Economic Analysis Research (CLEAR)*

**Demonstrating value for money and improving health care efficiency**

Created by Dr. Jeffrey Hoch in 2012, CLEAR adds a health economics perspective so that clinical research can be accompanied by economic evidence needed to answer questions about sustainability and accountability. In its first six months, CLEAR has worked on over 30 projects, including:

- Writing the economic analysis plan for the At Home/ Chez Soi trial protocol, a Housing First intervention for homeless individuals with mental illness in five Canadian cities.

- Conducting the economic evaluation for projects funded by the Building Bridges to Integrate Care program. The program is developing, implementing and evaluating new models of care delivery that bridge emergency departments, medical specialists, family physicians and community services in order to improve the quality of care and decrease preventable hospitalizations and emergency department visits for patients with chronic disease.

- Projects for the Council of Academic Hospitals of Ontario and the Ontario Bioscience Innovation Organization include studying the value of genetic testing, personalized medicine and technological innovation. For example, CLEAR conducted an economic analysis which showed that treating uterine fibroids with an MRI-guided, high-intensity focused ultrasound – a less invasive, same-day procedure – versus a hysterectomy, an inpatient surgery, could save Ontario’s health care system approximately $35 million annually.

In March 2013, Dr. Hoch was invited to testify on health technology assessment and innovation in front of the House of Commons Standing Committee on Health.

Dr. Jeffrey Hoch, director of the Centre for exceLlence in Economic Analysis Research, director of the Pharmacoeconomics Research Unit, and co-director of the Canadian Centre for Applied Research in Cancer Control

2001 recipient of the Career Scientist Award, Ontario Ministry of Health and Long-Term Care
Putting evidence into practice faster

BreaKThrough is the products and services arm of St. Michael’s Knowledge Translation Program, which is internationally recognized for its expertise in enhancing capacity in the science and practice of knowledge translation.

Since 2011, the BreaKThrough team has been helping the Public Health Agency of Canada to create and evaluate educational tools to support its Canadian Task Force on Preventive Health Care guidelines, including those for breast screening, diabetes, hypertension and cervical cancer.

The team is also helping the World Health Organization to implement guidelines on maternal and infant health in eight low- to middle-income countries, such as Kosovo, Nigeria and Thailand where maternal and infant morbidity is very high.

The Applied Health Research Centre
Guaranteeing quality and excellence in clinical research

Created by Dr. Muhammad Mamdani in 2009, the Applied Health Research Centre is the first and only full-service, University of Toronto-affiliated, non-profit academic research organization.

Some of its early achievements include:

- Securing more than $45 million in study funding
- Supporting and leading nearly 80 research projects (clinical trials, observational research, epidemiological research, health policy)
- Providing in-kind support to over 400 bio-statistical requests
- Running a 6,000-patient cardiology trial for the Mayo Clinic

Some of the Knowledge Translation Program’s achievements include:

- Receiving over $25 million in peer-reviewed funding in 2012
- Securing more than $2 million in contracts in 2012
- Publishing more than 100 manuscripts since 2009
- Training more than 1,000 people via knowledge translation courses since 2009

Dr. Sharon Straus is the author of three textbooks:

- Evidence-Based Medicine, How to Practice and Teach It, 4th edition
- Mentorship in Academic Medicine
- Knowledge Translation in Health Care, 2nd edition – this has sold over 150,000 copies and been translated into seven languages.

For more information about the services that each HUB group provides, visit www.hubresearch.ca
“A decade ago, St. Michael’s was largely known for its exceptional education programs and culture of caring. Today, we also have a stellar reputation for outstanding research in a number of areas, including knowledge translation.

— Dr. Arthur Slutsky
Concluding remarks

Research at St. Michael’s is focused on discovery that impacts health

Six years ago, when we imagined the impact of research performed at St. Michael’s, we hoped that it would bring innovations to the bedside and to the community faster, both locally and around the world.

After reading the stories published here, it’s incredible to see how far along we are in realizing this dream. The work being done is improving patient care at St. Michael’s and is also having a profound impact on public policy in Ontario and globally. Given that the knowledge translation program is still in its infancy, we are incredibly proud that these early achievements are already having such a large impact.

The other way that the knowledge institute impacts on the hospital is in the area of recruitment. It takes brilliant people to do groundbreaking research and it takes brilliant people to take great care of our patients. Often, it seems the same people do both. Of our 182 principal investigators, 110 are clinician-scientists. This means they practice as health care professionals as well as conduct scientific research.

The Keenan Research Centre and the Li Ka Shing Knowledge Institute have enabled us to recruit the best and the brightest. Award-winning researchers are recognizing that St. Michael’s is the place to be and are here because of our culture of caring, our stimulating and collaborative environment and world-class research facilities.

These accomplishments would not have been possible without the assistance of two key groups of people. We are incredibly grateful for the aid and encouragement of our generous donors, led by Mr. Li Ka-shing and Pat and Barbara Keenan who made truly transformational gifts, along with board members, partners, funders and collaborators – everyone who supported us in making our knowledge translation program a priority. We also offer our thanks and congratulations to the entire research team, for the incredible achievements of the last five years under the exceptional leadership of Drs. Arthur Slutsky, Andreas Laupacis and Ori Rotstein. It certainly has been a time of remarkable transformation.

We look forward to seeing what our scientists will do over the next five years as they continue to transform patient care and the health system.

Robert Howard
President and chief executive officer,
St. Michael’s Hospital

Alayne Metrick
President,
St. Michael’s Hospital Foundation
Support St. Michael’s through our foundation.
Call 416-864-5000 or visit stmichaelsfoundation.com